ITU-T SG 4 Overview Telecommunication Management, including TMN

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Outline

- **Scope**
- **Organizational Overview**
- **2003 Operational Plan**
- **Liaisons and Topics**
- **Organizational Details**

SG 4 Scope

- **Responsible for studies related to**
    - **The management of telecommunication services, networks, and equipment using the telecommunication management (TMN) framework. Additionally responsible for other management studies related to designations, transport-related operations procedures, and test and measurement techniques and instrumentation.**
- **Lead Study Group on TMN**

SG 4 Organization - 1

- **Chairman: Dave Sidor (Nortel Networks/USA)**
- **Vice Chairmen:**
  - **Dmitri Cherkesov (Russian Federation)**
  - **Nobuo Fujii (NTT/Japan)**
  - **Qi Feng (China)**
- **Q 1/4 (Terminology): Qi Feng (China)**
- **EDH: Dmitri Cherkesov (Russian Federation)**
- **Implementors' Guides: Knut Johannessen (Telenor/Norway)**
- **Promotion: Open**
- **Interaction with national and regional SDOs: Open**

SG 4 Organization - 2

Working Parties

- **WP 1/4: Designations, performance, and test equipment**
  - **Chaired by Peter Huckett (UK)**
- **WP 2/4: Common telecommunication management capabilities**
  - **Chaired by Geoff Caryer (BT/UK)**
- **WP 3/4: Telecommunications management information modelling**
  - **Chaired by Nobuo Fujii (NTT/Japan)**
- **WP 4/4: Telecommunication management infrastructure capabilities**
  - **Chaired by Lakshmi Raman (SBC/USA)**

2003 SG 4 Operational Plan: Priorities

- **TMN principles and architecture**
  - **Consolidation of functional requirements and business process approaches**
- **TMN infrastructure**
  - **Common working methods for specifying requirements and modelling**
  - **Protocols**
  - **Open distributed management**
  - **IP-based TMN framework**
- **Support for inter-TMN (X) interfaces**
  - **Application of telecommunication markup language (tML) framework**
  - **Management of emergency telecommunication service**
  - **QoS/SLA management**

2003 SG 4 Operational Plan (cont)

- **Application of CORBA-based TMN framework**
- **Integrated management of hybrid circuit/packet/IP networks**
- **TMN information modelling**
  - **BPON/EPON management**
- **TMN support for 3G wireless**
- **Performance objectives and procedures, test equipment, and inter-operator designations**
  - **Development of of conversion guidelines for current Recommendation M.1400 layer 1 extension**
- **Cooperation with outside SDOs, forums, and consortia**

SG 4 Liaisons and Topics

- **JointNM "Confederation" (IETF ADs, TMF, T1M1, ETSI SPAN 15 and TIPHON)**
  - Management of hybrid circuit/packet/IP-based networks: information exchange
  - SNMP: noted SG 4 adoption as TMN protocol for NE interfaces

- **IETF**
  - ITU alarm MIB: proposed changes which were accepted; potential for SG 4 adoption; further interaction expected
  - SNMP: potential SG 4 support for SNMP over TCP expressed
  - IP testing: comments on testing framework requested
  - Leaders: potential for AD to speak at SG 4 in October

- **TeleManagement Forum**
  - Under consideration by SG 4
    - Business processes: enhanced Telecom Operations Map (eTOM)
    - Human machine interface
    - Management architecture: Next Generation OSS (NGOSS)
  - Leaders: Meeting in May discussed potential collaboration topics; confirmed TMF presentation at SG 4 in October

SG 4 Liaisons and Topics (cont)

- **ATM Forum and DSL Forum**
  - ATM management information models: published several as ITU-T Recs with potential to add ATMF CORBA specification
  - Broadband information models: information exchange
- **3GPP SA5**
  - UML-based Methodology: SG 4 considering adoption of SA5's more structured approach
  - CORBA: SG 4 accommodated SA5's coarse-grained modeling and SA5's notification approach; SA5 accommodation of SG 4 in progress
- **IEEE802.ah (EFM), MEF**
  - Management of Ethernet Passive Optical Networks: requested requirements
- **UN/CEFACT (eBusiness MoU partner of ITU-T)**
  - Business processes: proposed collaboration to support inter-TMN communications

Scope of Working Party 1/4

- **Designations for interconnections among network operators**

- **Transport network and service operations procedures for performance and fault management**
  - **PDH and SDH network layer**
  - **ATM network layer**
  - **IP network layer and above**

- **Test and measurement techniques and instrumentation for use on telecommunications systems and their constituent parts**
  - **Error and availability performance**
  - **Timing jitter and wander performance**

Questions and Key Deliverables (1)

- **Q.2/4 Designations for interconnections among network operators**
  - Rapporteur   Paul Levine (Telcordia, USA)
  - Recommendations   M.14xx series
  - Deliverables 2003/04 Revision of M.1400 on designations
             New M.fides on formalised designations

- **Q.3/4 Transport network and service operations procedures**
  - Rapporteur   Leen Mak (Lucent Technologies, Netherlands)
  - Recommendations   M.13xx series, M.2xxx series
  - Deliverables 2003/4   Revisions of M.1301, M.1340, M.1380 and M.1385 on leased circuit performance and procedures
             Revisions of M.2100, M.2101 and M.2102 on PDH and SDH network performance and procedures
             New M.24otn on Optical Transport Network (OTN) performance and procedures
             New M.320x.testmgt on TMN management service requirements for BIS and maintenance

Questions and Key Deliverables (2)

- **Q.4/4 Test and measurement techniques**
  - Rapporteur   Wolfgang Miller (Acterna, Germany)
  - Recommendations   O.13x series, O.15x series, O.16x series, O.18x series and O.19x series
  - Deliverables 2003/04   New O.qfm on Optical Q-factor measurement

    New O.iptest on IP test equipment

- **Q.5/4 Jitter and wander test and measurement techniques**
  - Rapporteur   Dan Wolaver (Tektronix, UK)
  - Recommendations   O.17x series
  - Deliverables 2003/4   Revision of O.172 on SDH jitter and wander measuring equipment

    New O.173 on OTN jitter and wander measuring equipment

Scope of Working Party 2/4

- **Telecomms Management Principles**

- **Telecomms Management Architecture(s)**

- **Requirements for**

  - **the inter operator interfaces**

  - **the customer interfaces**

  - **the TMN User Interfaces**

- **Framework for unified management of integrated cct switched/packet based (e.g. IP) networks.**

Questions and Key Deliverables (1)

- **Q.7/4 TMN principles and architecture**
  - **Rapporteur:** **Petre Dini (Cisco/USA)**
  - **Recommendations** **M.3000, M.3010, M.3013 M.3016, M.3200, M.3400**
  - **Deliverables 2003/4**
    - **Align Management Services/Functions (M.3200, M.3400) with the Tele Management Forum's business process approach (eTOM)**

- **Q.8/4 TMN User Interface**
  - **Rapporteur :** **Open**
  - **Recommendations** **M.3300**
  - **Deliverables 2003/4** **None**

Questions and Key Deliverables (2)

- **Q.9/4 Requirements for the TMN X-interface**
  - **Rapporteur**   **Ken Smith (Verizon/USA)**
  - **Recommendations**   **M.3030, M.332x series, M.1520, M.153x series, M.ETS, M.QoS, M.xinfo, M.tML_ASN.1, M.tML_UML**
  - **Deliverables 2003/4**
    - **Management requirements for "Emergency Telecomms Service (M.3350), QoS (M.3341), extension to tML (M.tML_ASN.1, M.tml_UML)**

- **Q.11/4 Principles of the customer network management and the network-network management**
  - **Rapporteur**   **Ken Smith (Verizon/USA)**
  - **Recommendations**   **X.160, X.161, X.162, X.163, X.170, X.171.**
  - **Deliverables 2003/4**   **None**

Questions and Key Deliverables (3)

- **Q.10/4 Framework for unified management of integrated circuit-switched and packet-based networks (with an initial emphasis on IP-based networks)**
  - **Rapporteur   Tom Grim (SBC/USA)**
  - **Recommendations   M.3017**
  - **Deliverables 2003/4**
    - Framework for unified management of integrated circuit-switched and packet-based networks (M.3017)

Scope of Working Party 3/4

- **TMN Methodology**
  - **How to define management information**
  - **Protocol Neutral / Dependent**
- **Definitions of Management Information**
  - **Generic Information Model for TMN**
    - **GDMO Model / CORBA Model**
  - **Generic Network Level Management Information**
  - **Technology Specific Management Information**
    - **Access Network Technologies**
    - **ATM Network Element**
- **TMN Management support for IMT2000 and IN**

Questions and Key Deliverables (1)

- **Q.12/4 Methodology and generic information model for TMN**
  - Rapporteur   Knut Johannessen (Telenor/Norway)
  - Recommendations:
    - M.3020, M.3100, M.3120, M.3100-series Implementors' guide
  - Deliverables 2003/4
    - Amendments to M.3100, M3120 and M.3020
- **Q.13/4 Generic network level management of transmission systems**
  - Rapporteur   Tatsuhiko Yoshida (NTT/Japan)
  - Recommendations   G.85x series
  - Deliverables 2003/4
    - Working document for network level management of ethernet based network systems

Questions and Key Deliverables (2)

- **Q.14/4 Information modelling for broadband networks and ATM network elements**
  - **Rapporteur   Lakshmi Raman (SBC/USA)**
  - **Recommendations:**
    - **Q834.1-3, Q830-series Implementors' guide**
  - **Deliverables 2003/4**
    - **Q834.4 BPON management CORBA model**
    - **Working document on SDH and ATM Network models and integrated operations**

- **Q16/4 TMN management support for IMT2000 and IN**
  - **Rapporteur   Geoff Caryer (BT/UK)**
  - **Recommendations**
    - **M.3210, Q1831.1**
  - **Deliverables 2003/4   None**

Scope of Working Party 4/4

- **Distributed Management Architecture**

- **Frameworks and Services for Information Models for Management**
  - **Object Oriented Modeling paradigms**
  - **Common Management Support Services**
- **Data Communications Network**
  - **Interface protocols**
  - **Security**

- **Reusable management Applications**
  - **Alarm Surveillance**
  - **Performance Management**

Questions and Key Deliverables (1)

- **Q.17/4 OSI System Management and Open Distributed Management**
    - Rapporteur   Ken Roberts (Cisco, USA)
    - Recommendations   X.7xx series
    - Deliverables 2003/04   Revisions required for existing CMISE and CORBA based framework and model recommendations

        New X.7xx Recommendations in support of CORBA framework

- **Q.18/4 Protocols to support operation, administration and maintenance at the F, Q, and X interfaces**
    - Rapporteur   Dave Matthews (AT&T, USA)
    - Recommendations   Q.81x series
    - Deliverables 2003/4   Revisions to Q.811/Q.812

Questions and Key Deliverables (2)

- **Q.19/4 Information models for management applications related to switching and generic support services**
  - **Rapporteur**   Catherine Pontailler (Alcatel, France)
  - **Recommendations**   Q.82x and Q.82x.1 series
  - **Deliverables 2003/04**   New Q.82x.1 based on CORBA framework